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NEW HERBICIDE KILLS NINEBARK

by

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ABSTRACT

Ninebark can be killed with Tordon 22K or Tordon 101 with little danger to wildlife. Two spray coverages were found equally effective: foliage only and foliage-stem-root collar. No regrowth or sprouting occurred during three growing seasons.

Ninebark (Physocarpus malvaceus) decreases the utility of forest lands by severely restricting regeneration. Attempts to control this deep-rooted, perennial shrub with formulations of either 2,4-D or 2,4,5-T[2] have been unsuccessful. Tordon,[3] a more recently developed herbicide, is readily absorbed and translocated by leaves and roots of many broadleaved plants (1, 4, 6) and has generally been more effective than either 2,4-D or 2,4,5-T (3). Experiments begun during 1965 on the Boise Basin Experimental Forest in central Idaho show that Tordon effectively kills ninebark and prevents sprouting.

Tordon's high potency, even in minute quantities, requires that contact with desirable tree species, either through spray drift or soil containing the herbicide, should be avoided. Tordon may retain its potency in soil for several years (2). Pine, spruce, fir, maple, and cedar species in the Eastern United States have been killed or damaged by Tordon (6).

Birds, mammals, and fish show few or no ill effects from Tordon herbicide (5). Handling and application of the chemical are equally safe to the user if the manufacturer's instructions are followed closely.

In the present study, four north-facing plots were chosen at approximately 5,200 feet elevation. A plot contained 10 ninebark plants of uniform size, each of which was evaluated individually.

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[1] Forest Research Technician stationed at Boise, Idaho.

[2] 2,4-dichlorophenoxyacetic acid and 2,4,5-trichlorophenoxyacetic acid, respectively.

[3] Dow Chemical Company trade name for picloram, 4-amino-3,5,6-trichloropicolinic acid. Trade names are used only for identification and no endorsement by the U.S. Forest Service is implied.

Two formulations of Tordon were used: Tordon 22K[4] and Tordon 101.[5] Two plots were treated with Tordon 22K, the other with Tordon 101.

Plots were sprayed in June of 1965. Both formulations were applied with a garden-type sprayer adjusted for low pressure.

Two forms of spray coverage were tested with each Tordon formulation: (a) broadcast spraying of foliage with wetting of stem and root collar, and (b) broadcast spraying of foliage only. Spray mixes consisted of 1 fluid ounce per gallon of water for Tordon 22K and 4 fluid ounces per gallon of water for Tordon 101.

Ninebark response to Tordon was evaluated 1 week after application and after one, two, and three growing seasons. The plant response rating system described by Dow Chemical Company was used (1).

Distortion, curling, and browning of ninebark leaf margins was noted 1 week after application. At the end of one growing season there was almost 100 percent browning and drying of foliage on all plots, regardless of spray formulation or spray coverage. Only one ninebark plant, sprayed with Tordon 22K on the foliage, stem, and root collar, had a single leaf with green coloring.

No regrowth or sprouting occurred during the three growing seasons. Based on these results the following conclusions are made:

1. Tordon 22K and Tordon 101 at prescribed application rates kill ninebark with little chance of sprouting;
2. Foliage sprays of either formulation are as effective as foliage-stem-root collar applications.

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[4] 4-amino-3,5,6-trichloropicolinic acid as the potassium salt.

[5] 4-amino-3,5,6-trichloropicolinic acid as the triisopropanolamine salt and 2,4-dichlorophenoxyacetic acid as the triisopropanolamine salt.

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